EXCERCISE C40

EJERCICIO C40

Find all solutions to the system of equations below, making use of the matrix inverse found in ⟨acronymref|exercise|MISLE.C28⟩

encuentre todas las posibles soluciones del siguiente sistema de ecuaciones, haciendo uso de la matriz inversa. encontrada. ⟨acronymref|exercise|MISLE.C28⟩.

$$\begin{aligned} x_1+x_2+3x_3+x_4 &= -4\\ -2x_1-x_2-4x_3-x_4 &= 4\\ x_1+4x_2+10x_3+2x_4 &= -20\\ -2x_1-4x_3+5x_4 &= 9 \end{aligned}$$

SOLVE:

SOLUCION:

View this system as ⟨linearsystem | C | ⟨vect | b⟩⟩, where C is the 4×4 matrix from ⟨acronymref | exercise|MISLE.C28⟩ and ⟨vect|b⟩ = ⟨colvector| -4
4
-20
9⟩. Since C was seen to be nonsingular in ⟨acronymref | exercise | MISLE.C28⟩ ⟨acronymref | theorem|SNCM⟩ says the solution, which is unique by ⟨acronymref|theorem|NMUS⟩, is given by

Vea este sistema como: ⟨linearsystem | C | ⟨vect | b⟩⟩, donde C es la matriz 4×4 del ⟨acronymref| exercise|MISLE.C28⟩ y ⟨vect|b⟩ = ⟨colvector| -4 4 -20 9⟩.

dado que C esta denotada como no singular en ⟨acronymref|exercise|MISLE.C28⟩ ⟨acronymref| theorem|SNCM⟩que nos da la solucion, la cual es unica por ⟨acronymref|theorem|NMUS⟩ y esta dada por

⟨inverse|C⟩⟨vect|b⟩=⟨bmatrix|

38	18	-5	-2
96	47	-12	-5
-39	-19	5	2
-16	-8	2	1

⟩

⟨colvector|-4 -20 9⟩=⟨colvector|2 -1 -2 1⟩

Notice that this solution can be easily checked in the original system of equations.

Note que esta solucion,puede ser comprobada facilmente en el sistema originalde ecuaciones.